

ZOOGOER



Friends of the National ZOO

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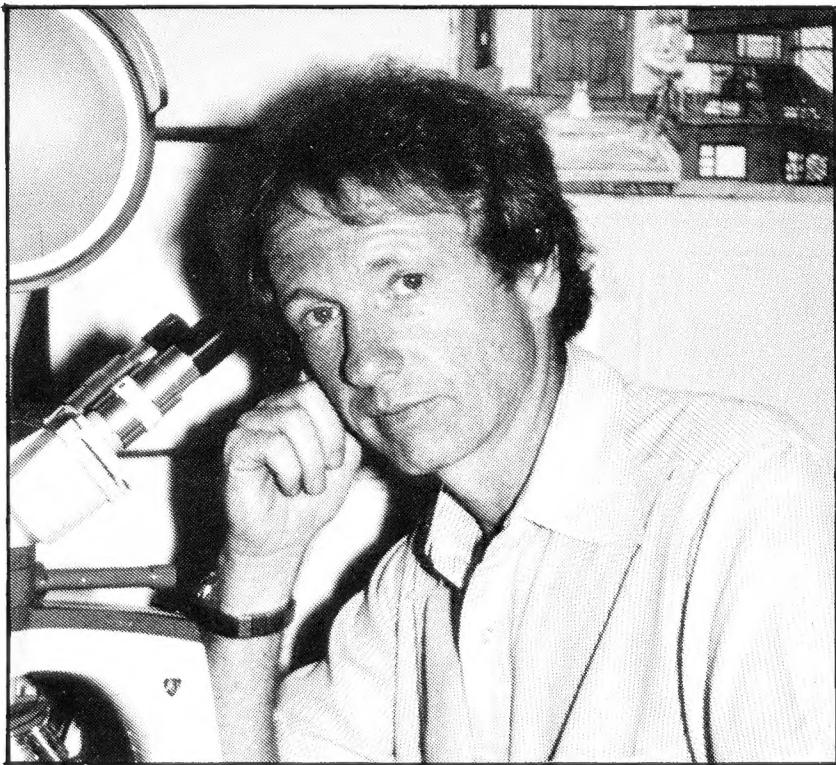
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Front Cover:
Residents of the National Zoo's newly renovated Reptile House, such as this Burmese python, will be featured in the week-long Summerfest of special events and activities for the entire family. See page 17 for the complete Summerfest schedule.

Photo by Jessie Cohen, NZP Office of Graphics and Exhibits.



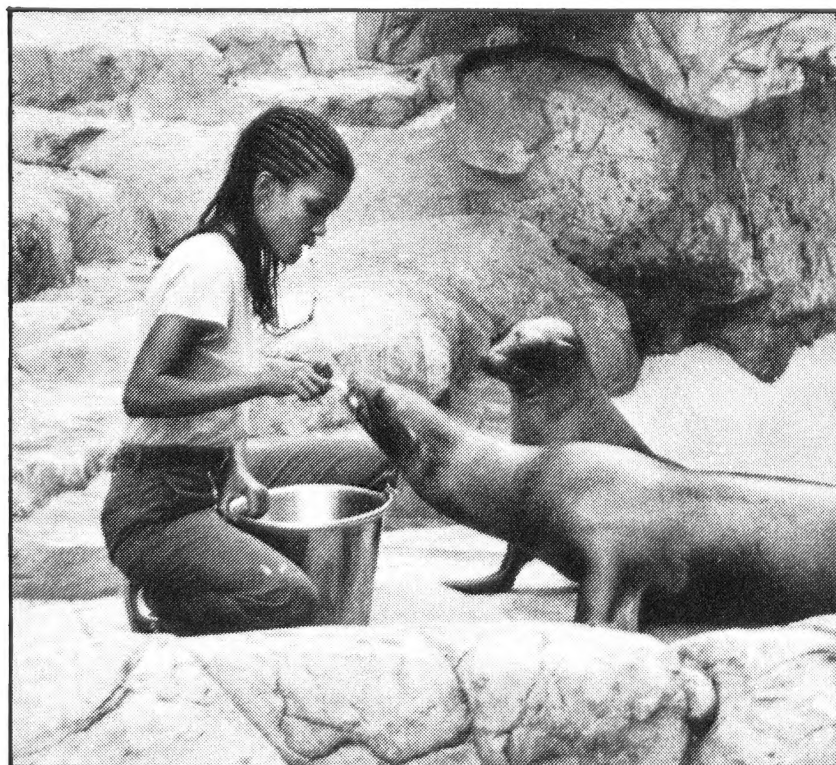
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Jessie Cohen, NZP Office of Graphics and Exhibits

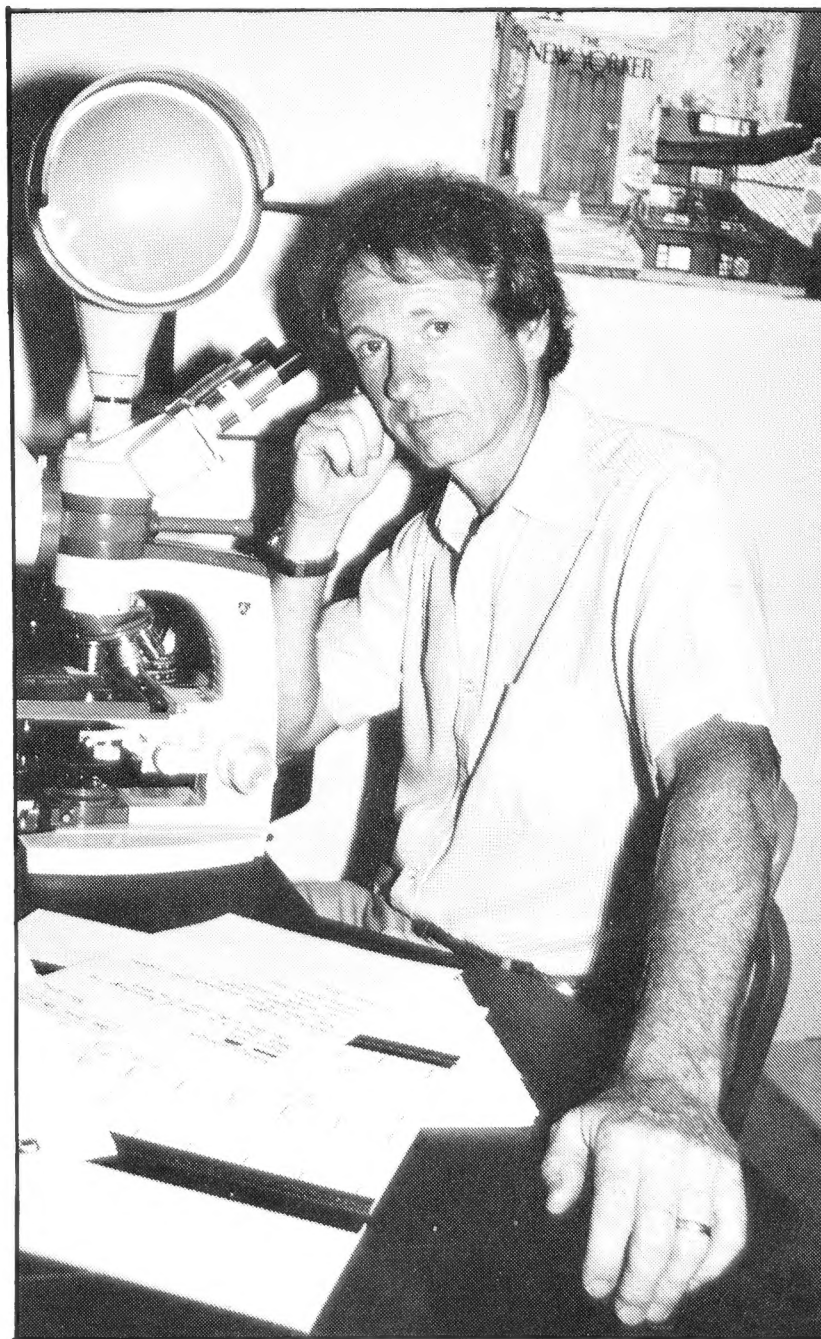
Pathology resident Dr. Peter Mann begins the dissection of an Indian rhinoceros. The animal's skin is very thick—up to 1½ inches in some areas. The autopsy revealed a twisted stomach.

“Dr. Quincy” of the Zoo

Thomas Crosby

When an animal at the National Zoo becomes sick or dies, it automatically triggers a meticulous search for the cause that can rival the efforts of Dr. Quincy, the pathologist on the popular television program. Although Dr. Quincy can usually solve his medical mysteries in an hour or less, Dr. Richard J. Montali and the staff of the National Zoo's Pathology Department spend many hours identifying and studying the disease problems that may threaten the lives of the Zoo's 2500 birds, amphibians, reptiles, and mammals.

The Zoo's Pathology Department provides medical testing and autopsy examinations for the entire animal collection. The staff is housed in the Hospital and Research Building where it performs highly specialized work in maintaining high standards of health for the Zoo's inhabitants.

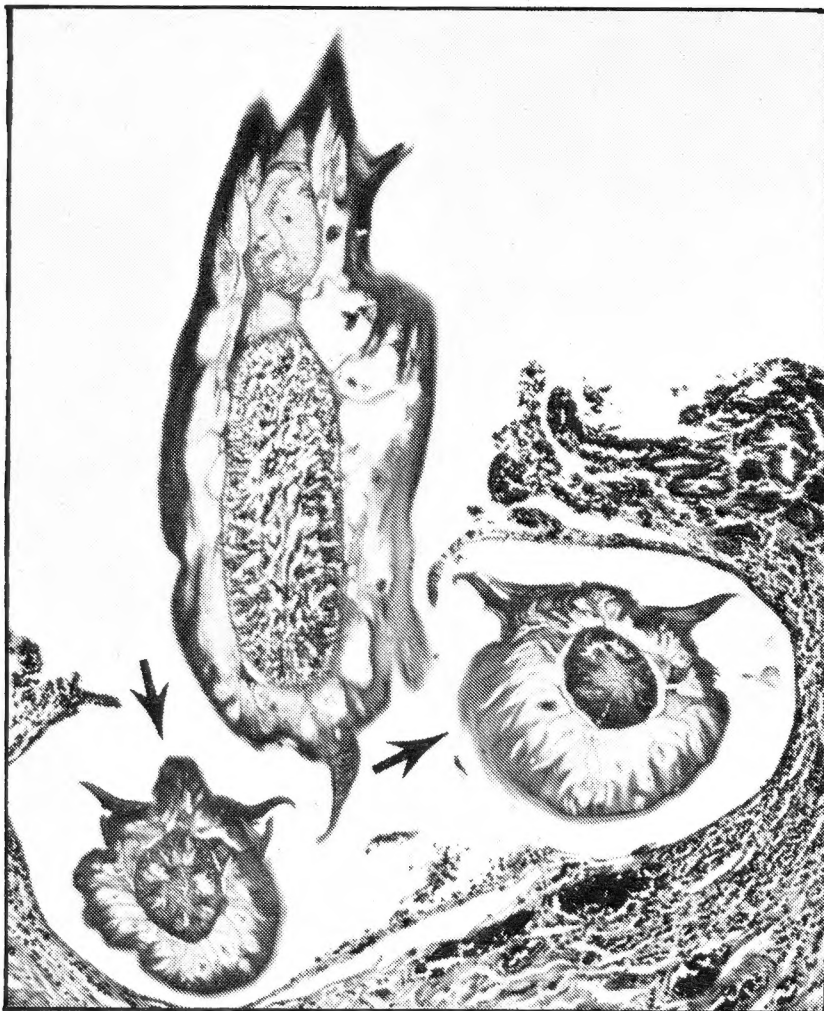


Dr. Richard J. Montali is one of only three veterinary pathologists working full time at an American zoo.

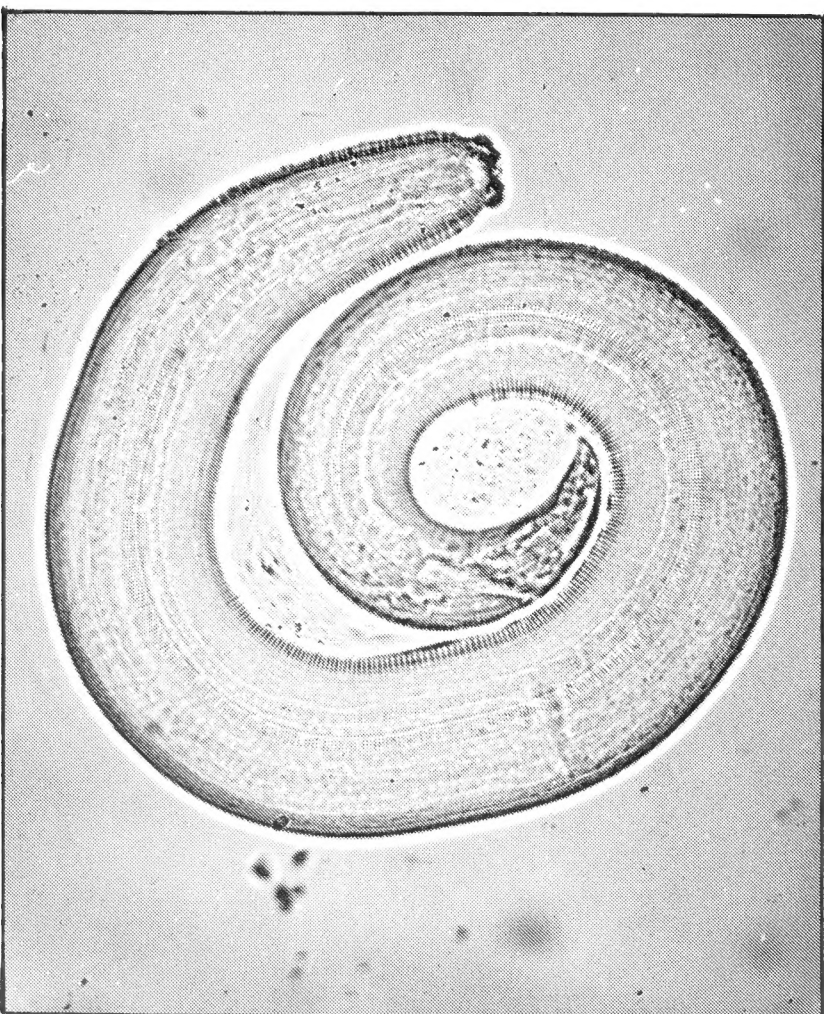
Jessie Cohen, NZP Office of Graphics and Exhibits

Montali, a veterinary pathologist and director of the department, trained in comparative pathology at the Johns Hopkins University School of Medicine. He was on the staff of their Division of Comparative Medicine for several years before joining the Zoo. Veterinary pathology, his specialty, is now a distinct branch of veterinary medicine requiring four or five years of training after the D.V.M. degree is obtained.

The pathology staff includes two medical technologists who perform blood counts, urinalyses, bacterial and fungal cultures, tests for parasites, and other skilled laboratory procedures on specimens taken from the collection, a histotechnologist who prepares slides of tissues from biopsy and autopsy specimens, and a pathology assistant. Pathology resident Dr. Peter Mann has been training for the past three



Armed Forces Institute of Pathology



Armed Forces Institute of Pathology

Top: This photo taken through a microscope highlights cross-sections of the roundworms (*Pterygodermatites nycticebi*) found embedded in the intestine of a golden lion tamarin. **Bottom:** This is an example of a larval worm discovered in a cockroach that was proven to be the intermediate host of the roundworm.

years to become a veterinary pathologist. There are also FONZ-supported research assistants in medical technology and medical records.

Montali and his staff work closely with Dr. Mitchell Bush and Dr. Don Janssen, the Zoo's highly regarded clinical veterinarians.

"One of our main concerns," Montali says, "is an infectious outbreak that could produce a major die-off in our collection." Unfortunately, a dead animal is sometimes only the first clue that a virus or bacterium has gained a foothold in a group of animals. With an infectious agent, the danger of an epidemic always looms large.

When this happens, a complete autopsy is performed. This entails a systematic dissection of the carcass. Samples of diseased tissues are taken to culture for infectious agents, and a complete microscopic examination of all organs follows. Depending upon clues from the autopsy, other tests may be needed, such as analysis for toxic substances or deficient nutrients.

This kind of medical exploration occurred last winter when several kangaroos died. At autopsy, a bacillus (*Bacillus cereus*) not usually harmful under normal conditions was discovered to be present in very high concentrations in the affected animals. This led Montali and Bush to learn from the keepers that because of the extremely cold weather

these Australian marsupials were huddling in their heated enclosures. This apparently allowed a build-up of the bacilli that, coupled with the stress of the cold weather, was responsible for the unusual deaths. The solution was to put the remaining kangaroos on antibiotics, intensively disinfect their quarters, and prevent their crowding together. These measures, along with a break in the Arctic-like weather, seemed to alleviate the problem, according to Montali.

"When we feel the Zoo is being faced with a life-threatening situation, we make a concerted effort to come up with a rapid diagnosis," Montali notes, "and this takes team effort. This is particularly true when several deaths appear to be related. We follow every possible lead and perform every type of laboratory test necessary to attempt to isolate the cause. This includes sending samples to other laboratories, such as the National Animal Disease Laboratory in Ames, Iowa, or the Center for Disease Control in Atlanta, Georgia, for special tests that exceed our capabilities. Sometimes we may not nail down the specific cause, but at least we can obtain enough evidence to rule out certain types of conditions. This allows us all to breathe a little more easily, knowing that cage mates and nearby animals are probably not in danger."

It was Zoo Director Dr. Theodore

H. Reed who, after several years of lobbying, convinced Congress that a pathology department with a full-time pathologist was a necessary part of the Zoo's biomedical program, just as a hospital for humans could not exist without a pathology unit. Dr. Robert Sauer was named the Zoo's first pathologist in 1968 and directed the program until 1974. Montali took over in 1975 and has built the department to its present level.

During that time, the Pathology Department has promoted and achieved high health standards for the Zoo's animals and has carried on active programs in teaching and research relative to zoological medicine. Montali works with many of the medical facilities in the area, including the National Institutes of Health, the Bethesda Naval Hospital, and Walter Reed Army Medical Center. He holds academic appointments in the pathology departments at the medical schools of both George Washington and the Johns Hopkins University medical schools. The Armed Forces Institute of Pathology (AFIP) perhaps contributes most significantly to the Zoo's programs. Their veterinary residents regularly participate at the Zoo and Montali's trainees take part in their sessions.

Only two other zoos—San Diego and Philadelphia—among the approximately 220 in the United States have full-time pathology programs.



Dr. Montali confers with Dr. Robert Hunt, a resident from the Armed Forces Institute of Pathology, while dissecting a Burmese python. The snake was found to have a bacterial pneumonia.

Most of the others use veterinary schools or state university laboratories for autopsies, usually for special cases. "This is why we feel it is extremely important to develop and publish pathology information pertaining to zoological species," Montali says, "because it has been sorely lacking in the existing literature and there are very few groups like ours interested in or capable of producing it."

When asked how one goes about identifying and dealing with disease problems in the diverse population of animals found at the Zoo, Montali

indicated that the types of diseases seen depend upon many factors, including the geographical area and the specific type of animal exhibited. He noted that infectious diseases appear to represent the greatest threat, due in part to the many ways that infections can enter a collection. "These can be brought in by the animals, birds, and vermin that commonly take up residence in a zoo. Although such animals may often go unnoticed," says Montali, "zoo grounds can teem with wild mice, rats, chipmunks, squirrels, opossum, raccoons, foxes, skunks,

pigeons, and—worst of all— cockroaches! Infectious agents can also be brought in by stray pets—cats and dogs that may pass through the grounds—or by migratory birds that stop over at the Zoo.

"An example of the latter," he notes, "occurred just after I arrived early in the spring of 1975 when duck deaths in the waterfowl ponds started to become excessive. Autopsies showed evidence of duck viral enteritis (DVE), a rather virulent, herpes-like virus that fortunately is limited to waterfowl, but not so fortunate for the Zoo's 800 ducks, geese, and swans, all of which had to be caught and vaccinated for the disease. The virus was traced to a wild North American black duck that had recently taken up residence in the collection. Pinning down the cause and vaccinating shortly thereafter were undoubtedly instrumental in saving the waterfowl collection, as DVE has been known to decimate collections in other outbreaks."

Another example of disease introduction by carriers occurred in the winter of 1976. An anteater died, but the autopsy did not reveal a specific cause. Several days later a dik-dik died, and this time a specific cause was found: yersiniosis—a contagious disease that is usually transmitted by infected rats.

When no other animal—or human—became ill during the next month, Zoo officials were relieved.



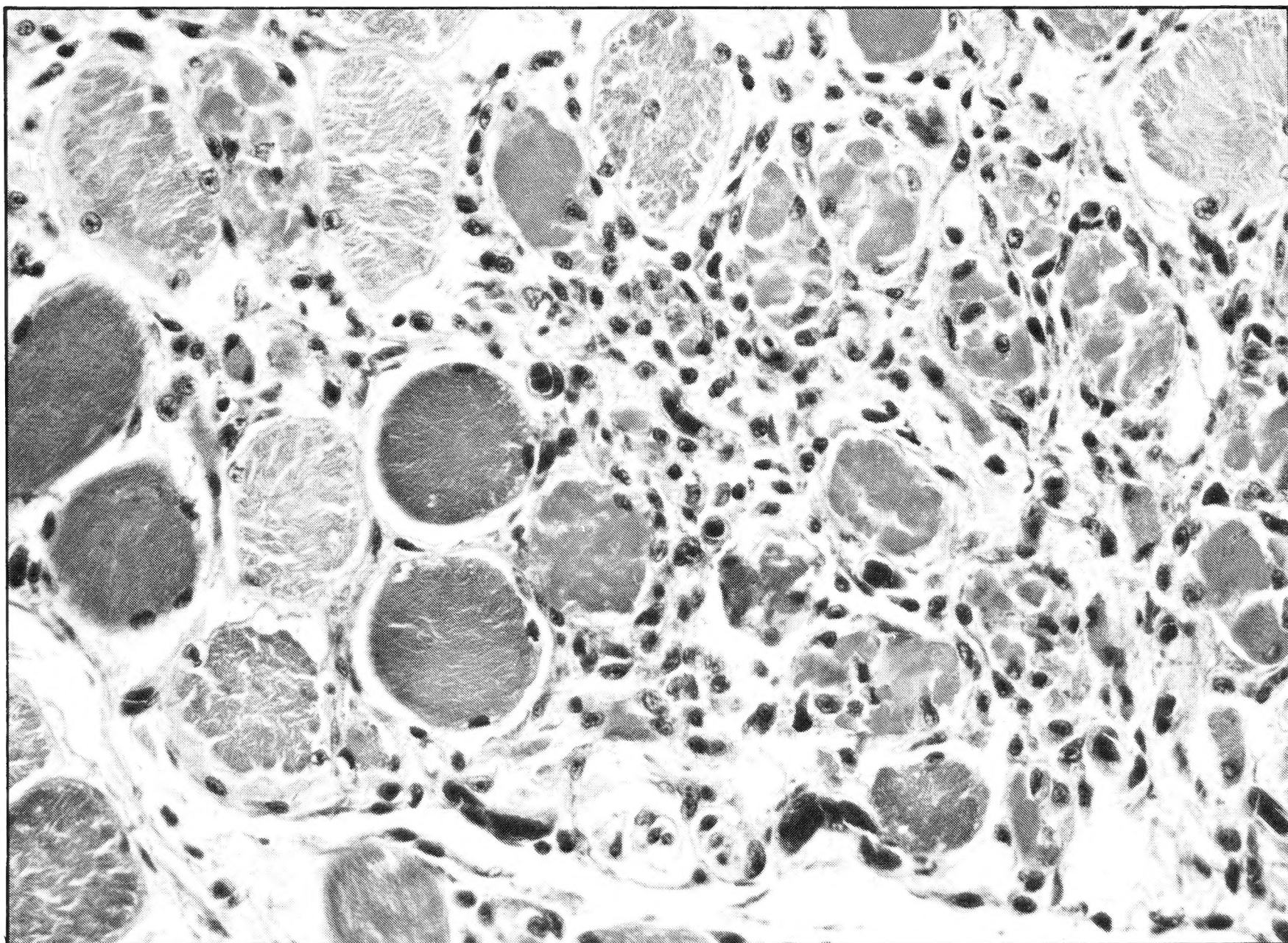
Sabin Robbins

Parvovirus infection, a new disease that has caused concern for pet dog owners, has been a problem with the Zoo's bush dogs, wild canids from South America.

But about two months after the anteater's and the dik-dik's deaths, a blesbok died suddenly. The next day another one died. Montali, recalling the earlier case of yersiniosis, was able to determine that this was also the cause of the blesboks' problem. This resulted in immediate quarantine and subsequent vaccinations of all potentially exposed animals and a further search for the source. Yersinia organisms were finally cultured from wild rats trapped alive on the Zoo grounds near the blesbok enclosure. The vermin extermination program was accel-

erated, and in time no more of the carrier rodents that had apparently contaminated the affected animals' food turned up.

Cockroaches are certainly unpleasant if they inhabit a household, but they spread few significant human diseases. This is not the case for Zoo primates. When an unusual type of intestinal roundworm began infesting the Zoo's colony of golden lion and brown-headed tamarins, a search was begun for the intermediate host so that the life-cycle of the worm might be broken. With the assistance of Dr. Chris Gardiner, a



Armed Forces Institute of Pathology

This photomicrograph shows skeletal muscle from a brown pelican with vitamin E deficiency. The darker round structures are normal muscle fibers; the pale, smudgy ones are degenerating.

parasitologist from AFIP, Montali's hypothesis that the cockroaches might serve as the intermediate host for this worm was tested. The roaches that sometimes run through the enclosures are relished by some of the tamarins, and they are frequently snatched up and eaten. Gardiner fed feces from the monkeys known to pass the parasitic eggs to experimental roaches. When the roundworm larvae showed up in the cockroaches, the answer was clear.

The final proof came when a golden lion tamarin was over-

whelmed by the parasite infection and cockroaches caught in the animal's enclosure were found to have the roundworm larvae. An intensive crackdown was launched to eliminate the roaches.

Autopsies also aid Zoo managers in ways other than detecting infections. Captive animals obviously cannot forage for their natural foods, so the Zoo must provide substitutes. Occasionally these substitutes might be lacking in important nutrients.

When several brown pelicans in a newly acquired flock died, patho-

logic studies revealed heart and muscle degeneration similar to that caused by vitamin E deficiency in domestic animals. This led to supplementation of the frozen smelt being fed the birds with vitamin E, which is present in live smelt but can be diminished after the fish are frozen.

"The greatest losses at the Zoo," Montali comments, "are due to a variety of causes. Although infectious problems probably have the highest incidence, across the board, there are many other factors that influence mortality rates. For example, the varied life spans of animals can be anywhere from two years in the smaller mammals to more than a century in the large reptiles, so there is always a natural attrition rate with which we must also contend."

In 1980 Montali and his staff performed 544 autopsies—on seventy-nine reptiles, three amphibians, 231 birds, and 231 mammals. That gave a mortality rate of 14.6 percent, which is considered better than average for a major urban zoo. "Included in the figures are pipped eggs, stillbirths, and neonates that failed to thrive. The numbers fortunately do not represent a lot of animals that people identify with zoos, such as lions, giraffes, and elephants," states Montali. He adds, "As our medical and management programs have improved over the years, many of the Zoo residents

have been able to survive infections, trauma, and nutritional deficiencies like those that occur in humans. For example, a twenty-year-old female long-crested eagle was found to have cataracts and advanced hardening of the arteries, and a 4½-year-old pukeko (a coot-like bird) developed congestive heart failure associated with a faulty heart valve. Different forms of cancer are also not uncommon in some of the longer-lived animals."

It is essential that Montali keep up with the diseases and problems that affect domestic animals as well as humans. "Most of the diseases we see are not unique to zoo animals," he says, "but they are usually ones common in pet animals or livestock. They may have a different appearance or a different adaptability in their zoological hosts, but it's important that I be familiar with them."

A new disease that has concerned Zoo officials as well as pet dog owners is parvovirus infection. Three years ago it was not a well established disease, but fortunately Montali was aware of it. When the Zoo's bush dogs developed diarrhea and began vomiting, it could have been symptomatic of several different medical problems. Blood tests revealed extremely low white counts—one effect this virus has on the blood-forming system. When the first bush dog died, the autopsy indicated a severe infectious prob-

lem in the small intestine. "We rushed some of this tissue through the lab and were able to identify characteristics of parvovirus," Montali says. "At the time, it was the first case occurring in exotic canids. Since then we have had to develop a very elaborate vaccination program for the bush dogs, as well as the maned wolf, crab-eating fox, and many of the other carnivores that may be susceptible."

Montali has become a leader among this country's veterinary pathologists and is an active member of the international community of zoo pathologists. In 1978 the National Zoo hosted the first comparative seminar devoted to the pathology of zoological species in the United States. Similarities between animal and human diseases were highlighted in this FONZ-supported symposium. Montali also participates in an annual international symposium on diseases of zoo animals.

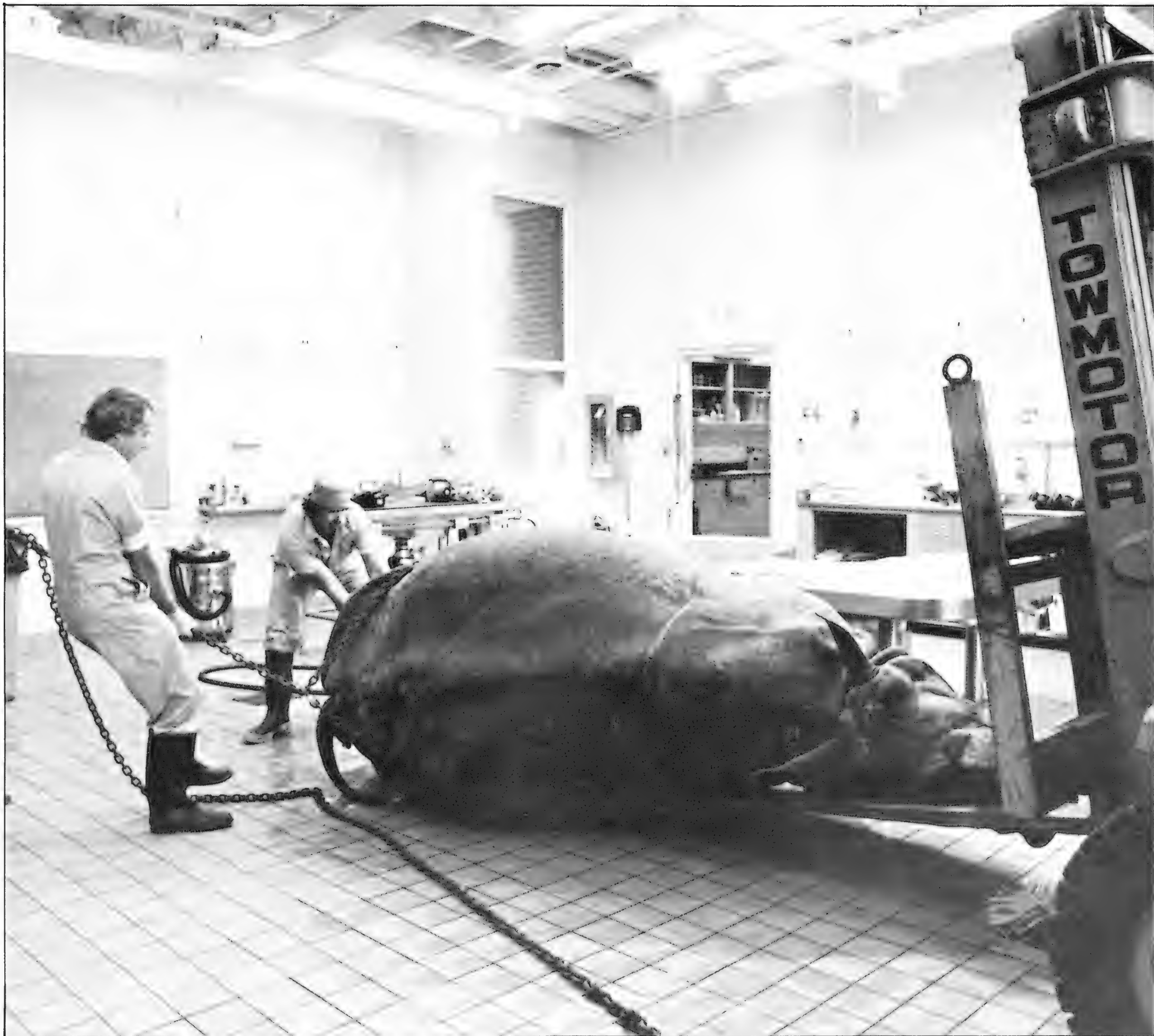
"There is no one great thing that we have discovered that has saved the whole Zoo," Montali says, "but there have been numerous accomplishments of varying magnitude. You feel a sense of satisfaction when you are able to identify disease problems that could potentially eliminate a valued group of endangered species. This is particularly important during these times, when natural environments are diminishing. Zoos can no longer be con-

sumers of animals. They have to breed them, and this means keeping the existing animals as healthy as possible.

"One important aspect of my work is to publish findings," says Montali. "This is not only in keeping with the tenets of the Smithsonian Institution but also alerts others working with zoological species to some of the preventive measures that we have been able to develop. Many of the reports have been based on some of the examples given here, such as the DVE outbreak, the yersiniosis deaths, parvovirus in exotic canids, and many others. These publications usually represent joint efforts of the veterinary staff in both my and Dr. Bush's departments.

"There are times when I think I've been here long enough, and I've seen everything—and then all hell breaks loose," he adds. "You have such a wide variety of animals—450 different species—that are susceptible to many things that I doubt there will ever be a lack of new things to do."

An equestrian and fox-chaser who commutes to the Zoo from the Laytonsville area near Gaithersburg, Montali points out, "A lot of people think that since I'm a pathologist I don't deal with anything alive. I have my own pets, and they're all alive—three horses, a pony, four cats, a dog, two hamsters, and a guinea pig. It's my own little zoo."



Jessie Cohen, NZP Office of Graphics and Exhibits

Dr. Montali and pathology assistant Richard Freeman ready an Indian rhino for autopsy in the Zoo's modern pathology facility.

The Bald Facts About Our National Emblem

Madeleine Jacobs

President Reagan has proclaimed 1982 as the Bicentennial Year of the American Bald Eagle, commemorating the anniversary of the adoption of the eagle by the Continental Congress as the central figure of the Great Seal.

Like the fortunes of the country it symbolizes, the bald eagle has had its ups and downs—especially at the hands of our Founding Fathers.

The tale of the bald eagle and the seal begins, appropriately, on July 4, 1776. Shortly after the Declaration of Independence was signed, the Continental Congress approved a resolution to create a seal for the United States of America and assigned Benjamin Franklin, Thomas Jefferson, and John Adams to carry out the task.

None of these eminent Americans had any experience in heraldry or seals. Franklin proposed an elaborate allegorical scene de-



The symbol of the United States is also the symbol of the National Zoo. The bald eagles at the Zoo have produced two chicks, the last in 1978.

picting Moses standing on the shore, extending his hand over the sea as Pharaoh is overwhelmed, a ray from a pillar of fire in the clouds descending to Moses. His motto: "Rebellion to Tyrants is Obedience to God." Jefferson and Adams came up with equally unworkable solutions.

They turned for help to a thirty-nine-year-old collector and painter, Pierre Eugene Du Simitiere. His goal was to show the diversity of the European origins of the American people, and the resulting design was accompanied by a motto, "E Pluribus Unum"—Out of Many, One. Later scholars felt Du Simitiere probably lifted his motto from the legend of the *Gentleman's Magazine*, a popular British publication of the day.

There followed a second committee and consultant, then a third. William Barton, the consultant to the third committee, created a design containing an eagle, but it, too, was overly complicated for a seal. When the third committee delivered its report, the Continental Congress turned it over to Charles Thomson, Secretary of the Congress, and charged him with delivering the seal.

Thomson pored over the pile of designs, sketches, and recommendations. His hand-drawn design contained, for the first time, an eagle as the central element.

As redrawn by Barton, the design for the Great Seal was finally accepted on June 20, 1782. It had taken six years, three committees, and the combined efforts of fourteen men to complete the task. From the first committee came the shield and motto. The second provided the red, white, and blue colors on the shield, the arrows and the olive branch, and the constellation of thirteen stars. The third committee's major contribution was the simplification of all the preceding designs and the crowning glory—the eagle.

Unquestionably, the quaint-looking, scrawny bird depicted in the original seal could easily have been mistaken for a turkey, a bird Benjamin Franklin is said to have greatly preferred to the bald eagle. Several years after his service on the seal committee, Franklin, then Ambassador to France, wrote to his daughter that some people had objected to the bald eagle "as looking too much like a Dindon or Turkey." He went on: "For my own part I

wish the Bald Eagle had not been chosen as the Representative of our Country. He is a Bird of bad moral character. He does not get his living honestly. . . the Turkey is in Comparison a much more respectable Bird. . . . He is besides, tho' a little vain & sily, a Bird of Courage, and would not hesitate to attack a Grenadier of the British Guards who should presume to invade his Farm Yard with a red Coat on."

Although at least one historian has suggested that Franklin wrote the letter tongue-in-cheek, most historians agree with Herbert R. Collins, curator of political history at the Smithsonian's National Museum of American History: "No doubt about it; Franklin disliked the bald eagle."

Whatever the truth, Franklin promptly used the new Great Seal on two publications printed on his press near Paris in 1783.

Fortunately, the emaciated eagle of Franklin's wrath has been transformed through several redesigns (the last in 1904) into the mighty bird we see today. Although its flight from drawing board to official document was shaky at first, the bald eagle remains an enduring symbol of power and freedom.

FONZ NEWS

Call for Nominations

In accord with Article II of our bylaws, the FONZ Board of Directors is hereby soliciting nominations from the membership.

Board Responsibilities

As members of a "working" Board, FONZ Directors "administer and manage" the affairs of the Friends of the National Zoo. The Board of Directors establishes the policies of the Corporation, approves budgets and expenditure of funds, and otherwise directs and supervises the activities of FONZ officers and employees. Much of the Board's work is accomplished through active committees that develop programs, budgets, and policies for the various FONZ activities and oversee their implementation. The principal committees include:

The *Administration Committee*, which establishes and supervises administrative policies and procedures for FONZ employees.

The *Education Committee*, which participates in the development of FONZ-supported educational programs and supervises all educational activities authorized by the Board.

The *Finance Committee*, which institutes, develops, and supervises the fiscal operations of the Corporation.

The *Front Royal Committee*, which coordinates FONZ support programs at the Zoo's Conservation and Research Center at Front Royal, Virginia.

The *Membership Committee*, which is responsible for recruiting new members to FONZ and for developing membership activities.

The *Publications Committee*, which supervises the publication and distribution of *ZooGoer* and *PawPrints*.

The *Visitor Services Committee*, which oversees the management and operation of the FONZ gift shop, food, parking, and other visitor service facilities at the Zoo.

All Board members serve on at least one of these committees, and many attend two or more FONZ meetings each month. Board members serve on a voluntary basis without pay.

Criteria for Selection of Directors

The criteria by which potential candidates are judged for nomination to the Board of Directors are: the candidate's strong interest in

supporting zoological education, research, and conservation in accordance with the purposes of our Corporation; experience or skills that are needed and would directly benefit the management and operations of FONZ; and willingness and time to participate fully in FONZ work and activities. Candidates must be dues-paying members of FONZ.

Nomination Procedures

Nominations may be made only by dues-paying family, couple, or individual memberships in good standing. (Senior citizen, contributing, and patron memberships of FONZ and members who previously joined the Corporation as life members are entitled to all rights and privileges of dues-paying family, couple, or individual memberships as appropriate.) Employees of FONZ or the National Zoo are not eligible for membership on the FONZ Board of Directors. All nominations must be submitted on an official FONZ nomination form with a biographic sketch of the nominee attached. Nomination forms can be obtained at the FONZ office or will be mailed upon request.

For information and/or the required forms, call 673-4950.

The deadline for submitting nomination forms and accompanying biographical sketches is August 21, 1982.

Address submissions to: Ms. Nella C. Manes, Chairperson, FONZ Nominating Committee, Friends of the National Zoo, National Zoological Park, Washington, D.C. 20008.

Photo Contest Winners

Congratulations to the winners of the Fifth Annual FONZ Photo Contest:

Adult—Color

First prize: Robert Rubock, Takoma Park, Maryland. *Second prize:* Mrs. Charles L. Pilzer, Kensington, Maryland. *Third prize:* John M. Frease, McLean, Virginia.

Adult—Black and White

First prize: Robert E. Miller, Hillcrest Heights, Maryland. *Second prize:* Marsha Glassner, Silver Spring, Maryland. *Third prize:* Dennis A. Kettles, Bethesda, Maryland.

Junior

First prize: Sara Himmelhoch, Rockville, Maryland. *Second prize:* Kate Barley, LaPlata, Maryland. *Third prize:* Brock H. Lueck, Bowie, Maryland.



Robert E. Miller's photograph of the Zoo's Asian elephants captured first prize in this year's FONZ Photo Contest.



Jessie Cohen, NZP Office of Graphics and Exhibits

Summerfest 1982

In celebration of Zoo and Aquarium Month, the National Zoo is presenting a week-long "Summerfest" of special events and activities for the entire family. The complete schedule is as follows:

Saturday, June 26

- 10:00 a.m. Sea Lion Training**
Watch a Zoo keeper train sea lions and explain all about these aquatic animals.
Sea Lion Pool
- 11:00 a.m. Teaching Animals at the Zoo**
Learn from the Zoo staff how and why they train Zoo animals.
Education Building Auditorium
- 1:00 p.m. - 4:00 p.m. Open House at the Commissary**
Visit the giant kitchen where meals are prepared every day for the Zoo's animals.
Commissary

- 1:00 p.m. Falconry Today**
Meet a falconer and his trained bird of prey. Learn about training these animals for hunting.
Education Building Auditorium
- 2:00 p.m. Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

Sunday, June 27

- 10:00 a.m. Sea Lion Training**
Watch a Zoo keeper train sea lions and explain all about these aquatic animals.
Sea Lion Pool
- 11:00 a.m. Snakes and Company**
Meet reptiles and members of the reptile and amphibian staff.
Education Building Auditorium

**1:00 p.m.-
4:00 p.m.** **Open House at the Commissary**
Visit the giant kitchen where meals are prepared every day for the Zoo's animals.
Commissary

2:00 p.m. **How Can Endangered Species Be Saved in Captivity?**
Learn how modern zoos meet the challenge of breeding exotic animals that are disappearing in the wild.
Education Building Auditorium

2:00 p.m. **Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

Monday, June 28

10:00 a.m. **Sea Lion Training**
Watch a Zoo keeper train sea lions and explain all about these aquatic animals.
Sea Lion Pool

10:00 a.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

11:00 a.m. **Why Do We Keep Tabs on Animals?**
Each Zoo animal has a kind of "social security number," a "birth certificate," and sometimes a "passport." Learn why and how this record system is important.
Education Building Auditorium

2:00 p.m. **Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

3:00 p.m. **Greet an Ape**
Meet with a Zoo keeper to learn about the daily life and care of the apes.
Great Ape House

4:00 p.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

Tuesday, June 29

10:00 a.m. **Sea Lion Training**
Watch a Zoo keeper train sea lions and explain all about these aquatic animals.
Sea Lion Pool

10:00 a.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

11:00 a.m. **Housing the Small Mammals: From Anteaters to Zorillas**
Learn how the Zoo staff and zoologists work with architects to design exhibits for the Zoo animals.
Education Building Auditorium

**11:00 a.m.-
2:00 p.m.** **Open House at the Small Mammal House**
Visit the Small Mammal House under renovation and see exhibits under construction.
Small Mammal House

12:00 noon-3:00 p.m. **Family Workshop: Housing the Small Mammals**
Try your own hand at designing exhibits for Zoo animals. (Obtain free tickets for this event at the Information Station in the Education Building lobby.)
Education Building Classrooms

2:00 p.m. **Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

4:00 p.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

Wednesday, June 30

10:00 a.m. **Sea Lion Training**
Watch a Zoo keeper train sea lions and explain all about these aquatic animals.
Sea Lion Pool

10:00 a.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

11:00 a.m. **How Do Animals Talk to Each Other?**
Learn how animals uses their senses to communicate.
Education Building Auditorium

12:00 noon-1:00 p.m. **Family Workshop: Radio Tracking Animals**
2:00 p.m. See and experiment with animal tracking equipment that Zoo scientists use in the field. (Obtain free tickets for this event at the Information Station in the Education Building lobby.)
Education Building Classrooms

1:00 p.m. **Meet a Keeper**
Talk with a Zoo keeper to learn about monkeys and their care.
Monkey House

2:00 p.m. **Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

4:00 p.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

Thursday, July 1

10:00 a.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

10:00 a.m. **Sea Lion Training**
Watch a Zoo keeper train sea lions and explain all about these aquatic animals.
Sea Lion Pool

11:00 a.m.-2:00 p.m. **Open House at the Small Mammal House**
Visit the Small Mammal House under renovation and see exhibits under construction.
Small Mammal House

11:30 a.m. **Visitor Communication: Symbols and Signs**
Take an entertaining look at Zoo graphics.
Education Building Auditorium

12:00 noon-2:30 p.m. **Family Workshop: Be an Artist for an Hour**
Work with Zoo designers and artists making symbols and signs and silk-screening art. (Obtain free tickets for this event at the Information Station in the Education Building lobby.)
Education Building Classrooms

2:00 p.m. **Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

3:00 p.m. **The Giant Panda in the Wild**
Learn the latest information about the giant panda from a Zoo scientist who has just returned from China.
Education Building Auditorium

4:00 p.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

Friday, July 2

10:00 a.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

11:00 a.m. **Why Zoos?**
Why do zoos exist? Should they exist? Learn about the dilemmas zoos face today.
Education Building Auditorium

1:00 p.m. **Inside Zoo Medicine**
Learn about the world of Zoo medicine—a bird with a broken bone, a lion with a limp, an elephant with a toothache. From diagnosis to treatment of an animal's needs, Zoo veterinarians have to be prepared for anything.
Education Building Auditorium

2:00 p.m. **Elephant Management Demonstration**
Understand how and why elephants are controlled in the Zoo. Watch Zoo keepers work with the animals.
Elephant House

3:00 p.m. **Greet an Ape**
Meet with a Zoo keeper to learn about the daily life and care of the apes.
Great Ape House

4:00 p.m. **Meet a Snake**
Get close to a snake and ask a Zoo keeper all about it.
Outside the Reptile House

Zoos and Aquariums—World Wildlife's Future?

Man has kept animals for decades—from prehistoric days when wild dogs were kept for protection and hunting, to the masses of wildlife slaughtered for entertainment in the Roman arenas, to the largest collection of animals ever amassed together at one time by Montezuma in the early 1500s. Historically, collections of animals were kept by royalty and a privileged few for their entertainment and amusement, but in the early 1700s animal collections became public domain. Zoos and aquariums sprang up all over the world. As years have passed, zoos and aquariums have taken on many roles.

The world's flora and fauna are diminishing at an alarming rate. Currently the Office of Endangered species of the United States lists 270 mammals, 214 birds, 75 reptiles, 16 amphibians, 57 fishes, 8 snails, 25 clams, 1 crustacean, 13



Captive breeding is the only hope for survival of many endangered species. There are few, if any, ruffed lemurs remaining in the wild. This youngster is one of three born at the Zoo this spring.

Jessie Cohen, NZP Office of Graphics and Exhibits

insects, and 60 plants—world-wide—as either endangered or threatened. And the list grows continually.

Conservation of wildlife is of utmost importance. It is possible that the endangered animals presently in zoos and aquariums will eventually be the only ones of their species left in the world. More and more, concentration is being placed on the breeding of certain critical species. Under the direction of the American Association of Zoological Parks and Aquariums (AAZPA), measures are being taken through a species survival plan to supervise the management of a number of animals to prevent them from becoming extinct. Animals such as the golden lion tamarin (a small, rare South American primate), the gaur (a Southeast Asian wild cattle form), the okapi (a short-necked African relative of the giraffe), and the Asian lion are examples of those being targeted for special attention. Instead of being managed on an individual zoo basis, certain species are being managed as a total captive population, including relocating

them to improve genetic combinations. If the animals respond to this enlightened management and a surplus becomes available, reintroduction of the animals into their natural environment ideally would follow. However, it is questionable whether there will be wilderness areas left in the future. The most desirable means of conservation would be to preserve animals in their natural environment. Unfortunately, this is impossible with some animals, and in many cases it would guarantee their extinction. The only viable alternative appears to be captive propagation.

It is also necessary continually to gain scientific knowledge to provide successful wildlife conservation programs. The development and application of reproductive technology and research such as formation of tissue banks, artificial insemination, and embryo transfers are just some of the tools now available to ensure the survival of wildlife. Behavioral studies both in the wild and in the zoo setting lead to proper management of animals in captivity and help provide

proper living environments for them. As more knowledge is gained, more species may have a chance to survive.

Knowledge is the keystone of zoos and aquariums in another way. More than 125 million Americans go to zoos and aquariums each year—more than attend all professional football and baseball games combined. People still go to “see” the animals, but awareness and understanding are 100 percent greater than when zoos first began. Zoos are “living museums,” better yet “living classrooms.” Zoos and aquariums take on the responsibility of educating millions of people as to the plight and wonders of wildlife. An educated populace is a concerned populace.

Zoos and aquariums of today have many purposes and an ever-increasing role in conservation, education, gaining of scientific knowledge, and recreation. For many species, zoos and aquariums may be their last chance on earth, and the fact remains that once an animal becomes extinct it can never be replaced.



Zoo and Aquarium Month, 1982

By the President of the United States of America

A Proclamation

Zoos and aquariums play a major role in the cultural life of our nation, providing a wholesome recreational and educational environment for more than 125 million visitors and a living classroom for some 20 million school children each year.

Among the 200 zoos and aquariums located in the United States are some of the finest facilities in the world. Many of our zoos and aquariums have pioneered in efforts to conserve the thousands of species they house. They have also collaborated with institutions around the globe to preserve wildlife and to develop more sophisticated techniques for exhibiting animals in a natural setting.

Animals are a universal language, and they have appeal to people everywhere. By enabling us to experience animals firsthand and to learn about their habitats, zoos and aquariums have become a valuable and unique asset.

NOW, THEREFORE, I, RONALD REAGAN, President of the United States of America, do hereby designate the month of June, 1982, as Zoo and Aquarium Month.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-fifth day of March, in the year of our Lord nineteen hundred and eighty-two, and of the Independence of the United States of America the two hundred and sixth.

Ronald Reagan



Zoo & Aquarium Month

June 1982

**Friends of the National Zoo
National Zoological Park
Washington, D.C. 20008**

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